

US-PAT-NO: 6549644  
DOCUMENT-IDENTIFIER: US 6549644 B1  
TITLE: Face-image processing  
apparatus  
DATE-ISSUED: April 15, 2003

US-CL-CURRENT: 382/118, 382/117

APPL-NO: 09/ 442243

DATE FILED: November 17, 1999

	FOREIGN-APPL-PRIORITY-DATA:	
COUNTRY	APPL-NO	
APPL-DATE		
JP	11-137702	May 18,
1999		

----- KWIC -----

Detailed Description Text - DETX (36):

A second embodiment is structured such that the process of the nostril-region extracting means according to the first embodiment for setting the point at which the retrieval of the nostrils is started is arranged as follows. As an alternative to the position of the center of gravity of the nostrils, points at which retrieval of the right and left nostrils is started

are set from the position of the peak of the **histogram** of projection of the binarized region in the horizontal direction at the same intervals to the right and left. Therefore, if no filter pass pixel exists at the previous position of the center of gravity of the nostrils, a start point which permits the spiral retrieval can be set. As a result, stable extraction of the nostrils can be performed and the reliability of the extraction of the nostrils can be improved.

Detailed Description Text - DETX (42):

The portion in the vicinity of the nostrils in the binarized region shown in FIG. 3B is projected to X axis, as shown in FIG. 10. The temporary position 21 of the nostrils is set by using the intersection of the position of the peak of the projection **histogram** and the Y coordinates of the previous **center of gravity** of the nostrils.

Claims Text - CLTX (2):

2. A face-image processing apparatus comprising: image input means for inputting an image of a face; multi-value image storing means for storing multi-value image obtained by said image input means; nostril-region extracting means for extracting a nostril multi-valued region from the multi-value image outputted by said multi-value image storing means; eye-region extracting means for extracting a multi-valued eye region extracted

from a multi-value image outputted by said multi-value image storing means with using a nostril region extracted by said nostril-region extracting means as a reference point; binarized image storing means for storing a result outputted from said nostril-region extracting means and said eye-region extracting means as a binarized region; and opening/closing determining means for determining opening/closing of the eyes in accordance with a feature of a shape of the binarized eye-region outputted by said binarized image storing means, wherein said nostril-region extracting means extracts a nostril region at which a retrieval is started from a peak position of a projected **histogram** of the image of the face by spirally retrieving two regions apart from each other for the same distance between a right and a left nostrils surrounding the retrieval start point, if it is an initial extracting time or if there is no nostril-region at a previous position of a **center of gravity**.